

REMARKS

Claims 25, 26, 28-32, 36 and 40-45 are pending. New claims 45 and 46 are added herein.

I. Applicant respectfully thanks the Examiner for holding an interview wherein operation of the claimed device and the cited reference, Siersch, was discussed.

Claim 40, has been amended for clarity (“no direct reflection light” instead of “no direct light”) which also addresses the issue at paragraph 3. of paper no. 20. The amendments are at least supported by the figures. No new matter has been added. Claim 40 claims:

40. (Twice Amended) An illumination arrangement for a stereo microscope, in particular, a Greenough type comprising:

a least one illumination channel arranged in a plane essentially orthogonal to [the] a plane of the two observation channels, wherein the illumination is effected at an angle to the optical axis of the microscope by means of at least one light conductor so that no direct reflection of illumination light falls into the observation channels and *a fluorescence excitation is effected through the light conductor.*

The question of how an image could be present on the observation channels if no direct reflection of illumination light falls into the observation channels was discussed in the interview. The answer in relation to claim 40 is that fluorescent light is emitted from the sample and enters the observation channels when stimulated by the illumination light which is incident “essentially orthogonal” to the observation channels. Therefore, there is effectively no reflected illumination light entering the observation channels (because that illumination light is reflected away from the observation channels), but instead a totally different fluorescent light which fluoresces from the specimen when stimulated, enters the observation channels. Fluorescent microscopy for example is useful when studying living tissue. Therefore, it is important to note the fluorescent microscopy limitations of claim 40, i.e., “and a fluorescence excitation is effected through the light conductor.”

Siersch discussed below, does not teach or suggest these claimed limitations. In contrast, clearly, as shown in Fig.3 of Siersch, the illumination light is reflected back almost directly into the optics, and clearly the illumination light is not incident in a “plane essentially orthogonal to a plane of the two observation channels” as claimed.

II. The obviousness rejections of independent claim 40 and dependent claims 25, 26, 28, 29, 36, 41, 43 and 44 in view of Siersch, DE 94 08 066.6.

For the reasons above claim 40 and its dependent claims are respectfully asserted to be allowable.

Additional points:

Applicant cited the Siersch reference on an IDS to the USPTO, and it was also overcome in the corresponding German examination which issued as DE: 198 22 255 C2 (which applicant has previously provided to the Examiner). Therefore, applicant is respectfully very familiar with this reference. Additionally, it would be much more useful for an English language reference to be recited by the UPSTO as the primary reference so that the teachings of the reference can be properly construed rather than merely relying on the figures and an Abstract.

In summary, all of the illumination solutions of Siersch are directed as close to the receiver optics axis as possible for illumination (see figures 1, 3, and 4). Therefore, the arrangement is similar to the classical coaxial light field illumination.

Siersch does not describe anywhere the limits of his proposed solution, i.e., Siersch's technique is suitable only for diffusely scattering samples because with reflecting samples, the arriving direct reflected illumination light in the illumination beam paths produces spots. Accordingly, with classical coaxial illumination arrangements, polarization optical elements are built into the illumination – and observer beam paths, in order to remove existing reflection for the correct near axis illumination.

The Solution According to the Invention.

The solution according to the invention is directed to avoid direct reflection by an optimized angular illumination in order to eliminate the use of light absorbing polarized optical components.

III. New claim 45 is added herein and is based on claim 44.

Applicant submits claim 45 which is based on claim 44 except for the word “substantially” which is added in view of the fact that with some high reflective or uneven samples it may be very difficult to eliminate all of the ambient and random illumination reflections. This amendment is supported by claim 44 and the figures at least. No new matter has been added.

This limitation is not taught by Siersch which reflects most of the illumination light into the observation channels (see Siersch Fig. 3).

IV. New claim 46

Applicant respectfully adds new claim 46 which is also based on claim 44 and 45 except that the fluorescent microscopy limitation is removed. Therefore, no new matter has been added. This claim reflects the fact that the present invention is not limited to fluorescent microscopy *per se*.

Applicant respectfully explain that a visible illumination is also possible as disclosed in the specification at page 6. To explain, in such an embodiment only a very slight reflected illumination light is visible in the edge of the optics.

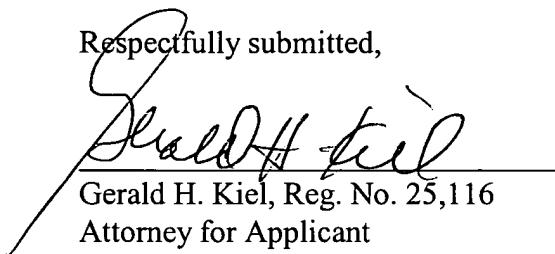
This limitation is not taught by Siersch which reflects most of the illumination light into the observation channels (see Siersch Fig. 3).

V. Conclusion.

In light of the *FESTO* case, no argument or amendment made herein was related to the statutory requirements of patentability unless expressly stated herein. No claim amendment or argument made was for the purpose of narrowing the scope of any claim unless Applicant has

explicitly stated that the argument is "narrowing." It is respectfully requested that all of the claims be reconsidered and allowed. An early and favorable action on the merits is respectfully requested.

Respectfully submitted,



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MARKED-UP CLAIMS

40. (Twice Amended) An illumination arrangement for a stereo microscope, in particular, a Greenough type comprising:

 a least one illumination channel arranged in a plane essentially orthogonal to [the] a plane of the two observation channels, wherein the illumination is effected at an angle to the optical axis of the microscope by means of at least one light conductor so that no direct reflection of illumination light falls into the observation channels and a florescence excitation is effected through the light conductor.

Please add the following new claims:

45. (New) An illumination arrangement for a stereo microscope, in particular, a Greenough type comprising:

a least one illumination channel arranged in a plane essentially orthogonal to a plane of the two observation channels, wherein the illumination is effected at an angle to the optical axis of the microscope by means of at least one light conductor so that substantially no direct reflection of illumination light falls into the observation channels and a florescence excitation is effected through the light conductor.

46. (New) An illumination arrangement for a stereo microscope, in particular, a Greenough type comprising:

a least one illumination channel arranged in a plane essentially orthogonal to a plane of the two observation channels, wherein the illumination is effected at an angle to the optical axis of the microscope by at least one light conductor so that substantially no direct reflection of illumination light falls into the observation channels.